CHARACTERIZATION OF LIGNINOLYTIC ENZYMES AND METABOLIC PROFILE OF *CRYPHONECTRIA PARASITICA* AND THE ISOGENIC CONVERTED STRAINS BY CHV1 HYPOVIRUS

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Resumo: *Cryphonectria parasitica*, the causal agent of chestnut blight, causes necrotic lesions (so-called cankers) on the bark of stems and branches of susceptible host trees. *Cryphonectria Hypovirus* 1 (CHV1) infects *C. parasitica* and reduces the fungus virulence (hypovirulence) and alters the fungus morphology in culture (pigmentation and sporulation capacity). By this characteristics the mycovirus CHV1 is used in Europe as a biological control agent of Chestnut Blight.The aim of this project is to better understand the effect of the mycovirus on the fungi pathogenicity by comparing the production of some lignin degrading enzymes and the metabolic profiles of some virulent and hypovirulent (converted and original) strains. For qualitative evaluation, several different compounds have been used as indicators for ligninolytic enzymes production. For quantitative evaluation, among 9 strains 5 were chosen for biological tests and cultivation in minimal liquid media and the amount of enzyme produced were analysed. Virulent strains were found to cause more damage in chestnut branches and to produce more lignin degrading enzymes. In apple fruits, some CHV1 strains produced bigger rot lesions than wild type strains did. In parallel, Biolog FF MicroPlates have been used for the first time with *Cryphonectria parasitica* to assess their metabolic profiles by the utilization of 95 different carbon sources. Carbohydrates, amino acids, amines/amides, miscellaneous and polymers were found to be more consumed by hypovirulent strains; therefore, this may suggest. an adaptation in this fungal strains ecology and field fitness.

Palavras-chave: *Cryphonectria parasítica*; Biolog FF MicroPlates; Ligninolytic enzymes; *Cryphonectria Hypovirus* 1 (CHV1)

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